

# Common Core State Standards Systems Map

Version 2013.6.13



Academy for Systemic Change  
collective capacity for a scale that matters

**Joe Hsueh and Peter Senge**

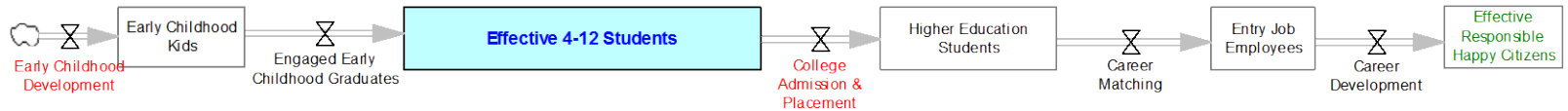
*joehsueh@mit.edu*

*psenge@mit.edu*

# Two Systems Maps

- Enclosed are two systems maps capturing the complexity and interdependency of the Common Core State Standards implementation:
  1. Stock-and-Flow diagram
  2. Core Reinforcing Loops

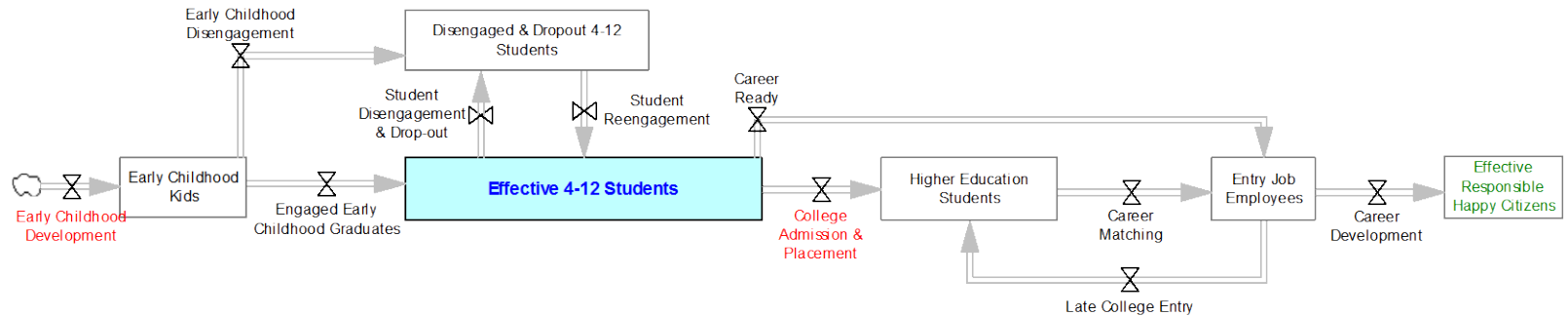
# 1. Stock-and-Flow Diagram



## INCREASING THE STOCK OF EFFECTIVE STUDNETS

### Stock-and-Flow Diagram Notation

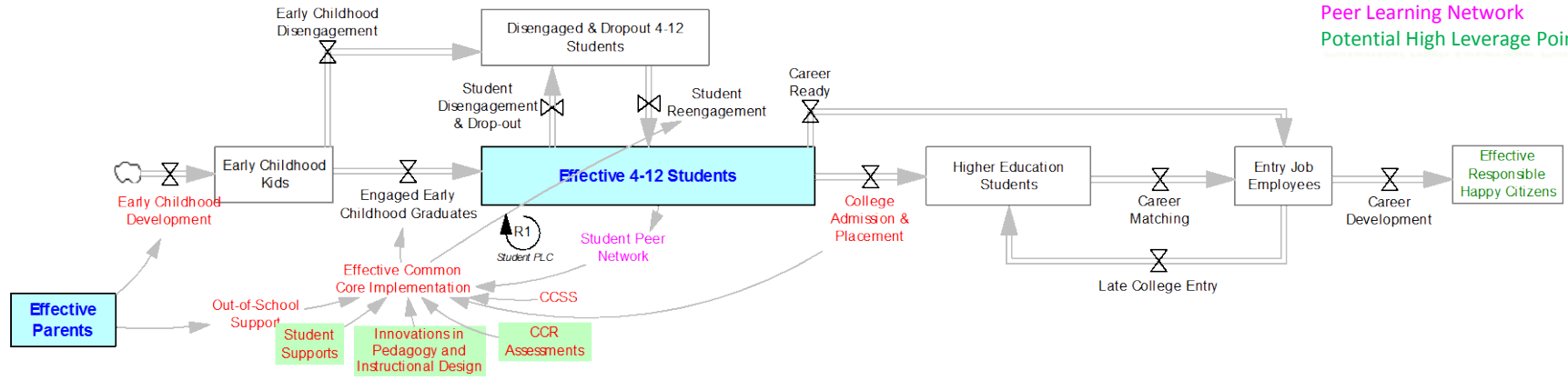
- The **rectangle** “*Effective 4-12 Students*” denotes a stock variable that behaves like a bathtub with an inflow and an outflow.
- The **hollow arrow** with the valve sign “*Engaged Early Childhood Graduates*” denotes the rate of *Early Childhood Kids* grow into *Effective 4-12 Students* over time.
- New borns grow from *Early Childhood Kids* to *Effective 4-12 Students* to *Higher Education Students* to *Entry Job Employees* to *Effective Responsible Happy Citizens* – the vision of the education effort.



## STUDENTS MOVING FROM DISENGAGED TO ENGAGED AND EFFECTIVE

- *Early Childhood Kids* can become disengaged and grow into *Disengaged & Dropout 4-12 Students*, which can be reengaged into *Effective 4-12 Students*.
- *Effective 4-12 Students* can enter into higher education or they can go into entry jobs directly, some of which will return to school to get a college education.

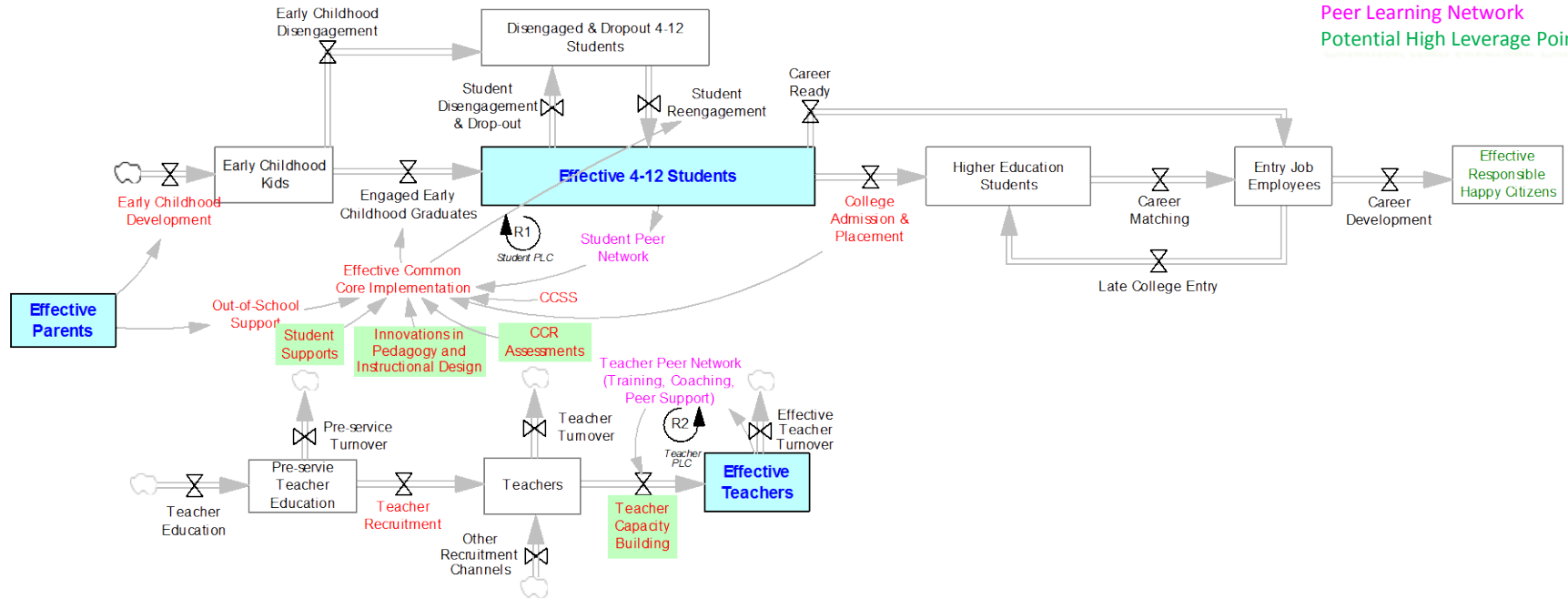
Color Code:  
 Key Systems Capabilities  
 Interventions  
 Peer Learning Network  
 Potential High Leverage Points



### WAYS THAT EFFECTIVE CCSS IMPLEMENTATION CAN INCREASE STOCK OF EFFECTIVE STUDENTS

- **Solid Arrow** represents the causal direction from a cause to an effect, e.g. more *Effective Parents* lead to higher *Early Childhood Development* and *Out-of-School Supports*.
- *Effective Common Core Implementation* is driven by *Out-of-School Supports*, *Student Supports*, *Innovations in Pedagogy and Instructional Design*, *College and Career Readiness CCR Assessments*, *Common Core State Standards CCSS* and *Student Peer Network* among others.
- **R sign** indicates a positive reinforcing feedback loop.
- **R1 Student Peer Network (PN) Loop**: more *Effective 4-12 Students* lead to more effective *Student Peer Network*, which enhances *Effective Common Core Implementation* through peer learning and creates more *Effective 4-12 Students*.
- Reinforcing feedback loops are key to scale up systemic change as various interventions catalyze circular self-reinforcing processes.
- The goal is to invest in various high-leverage points to the extent where the system tips into self-sustaining change processes.

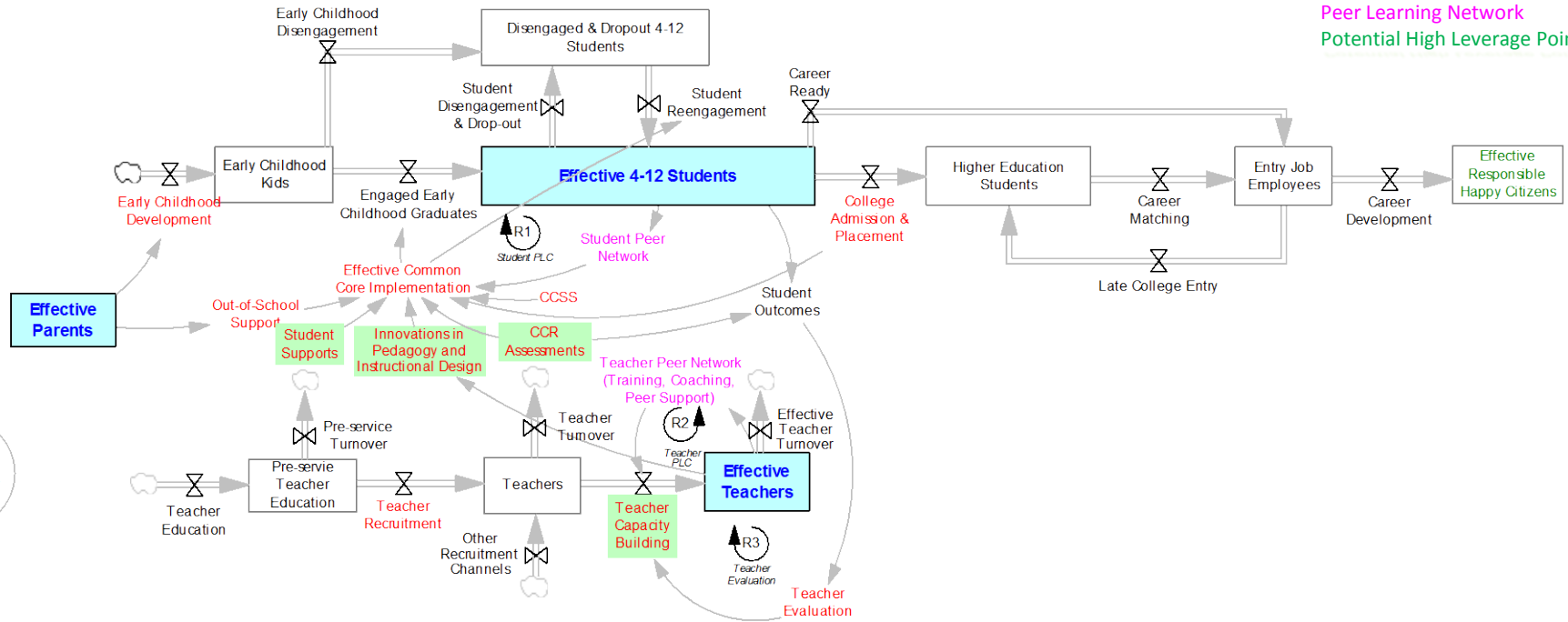
Color Code:  
 Key Systems Capabilities  
 Interventions  
 Peer Learning Network  
 Potential High Leverage Points



## GROWING EFFECTIVE TEACHERS

**R2 Teacher Peer Network Loop:** more *Effective Teachers* lead to a stronger *Teacher Peer Network*, which increases *Teacher Capacity Building* and creates more *Effective Teachers*. Creating a teacher peer network where teachers learn from their effective peers creates a powerful reinforcing loop to generate more effective teachers over time.

Color Code:  
 Key Systems Capabilities  
 Interventions  
 Peer Learning Network  
 Potential High Leverage Points



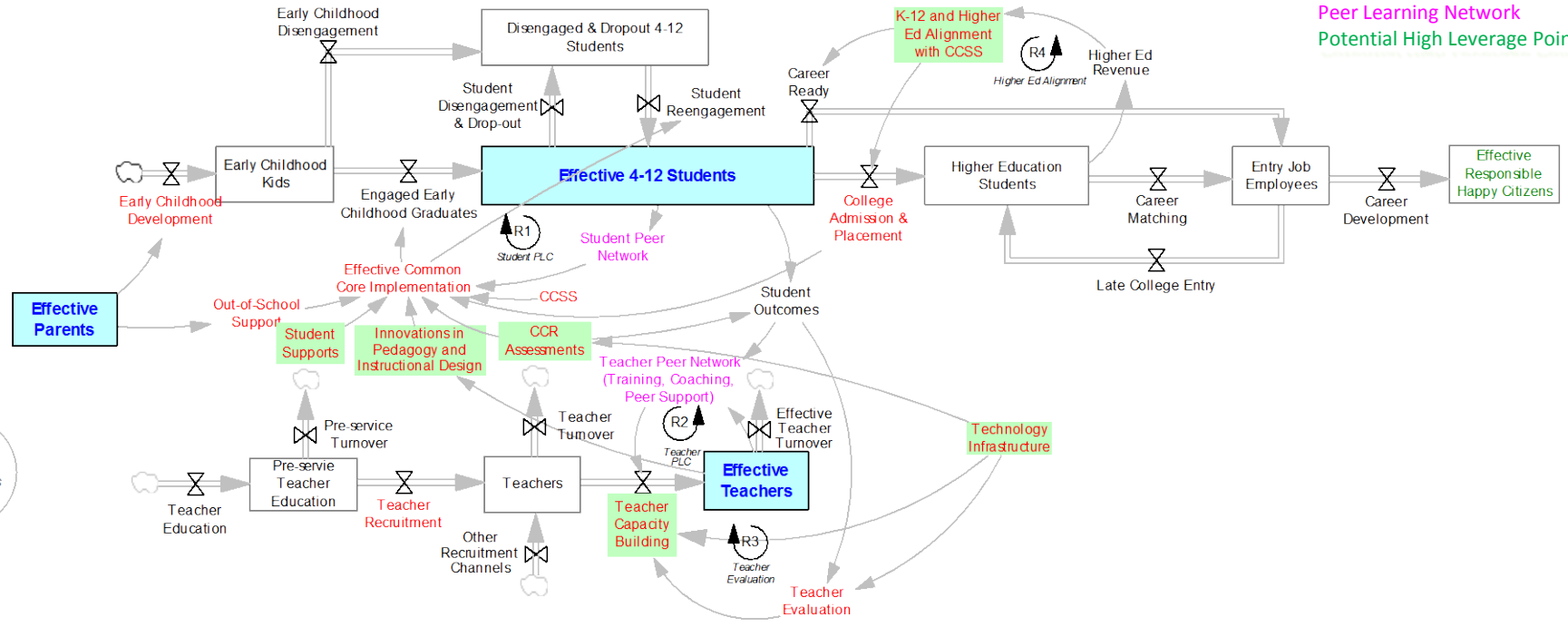
## CONNECTING STUDENT OUTCOMES, TEACHER EVALUATION WITH TEACHER CAPACITY BUILDING

**R3 Teacher Evaluation Loop:** more *Effective Teachers* lead to higher *Innovations in Pedagogy and Instructional Design*, which increases *Effective Common Core Implementation* that creates more *Effective 4-12 Students* and better *Student Outcomes*. How to close the feedback loop so better *Student Outcomes* feed back to the creation of more *Effective Teachers*? 1) Strengthen the *Teacher Evaluation—Teacher Capacity Building* link by creating incentives and effective support for *Teacher Capacity Building* based on *Teacher Evaluation&Feedback*, and 2) strengthen the *Student Outcomes—Teacher Evaluation* link by aligning *Teacher Evaluation& Feedback* based on understanding influences of pedagogical innovation on *Student Outcomes*. This closes the reinforcing feedback loop from *Effective Teachers* to *Student Outcomes* to further development of *Effective Teachers*. *Teachers* are evaluate, coached and rewarded based on determinants of higher *Student Outcomes*, which further build their capacity to become *Effective Teachers*.

What are some specific investments to strengthen these two links?

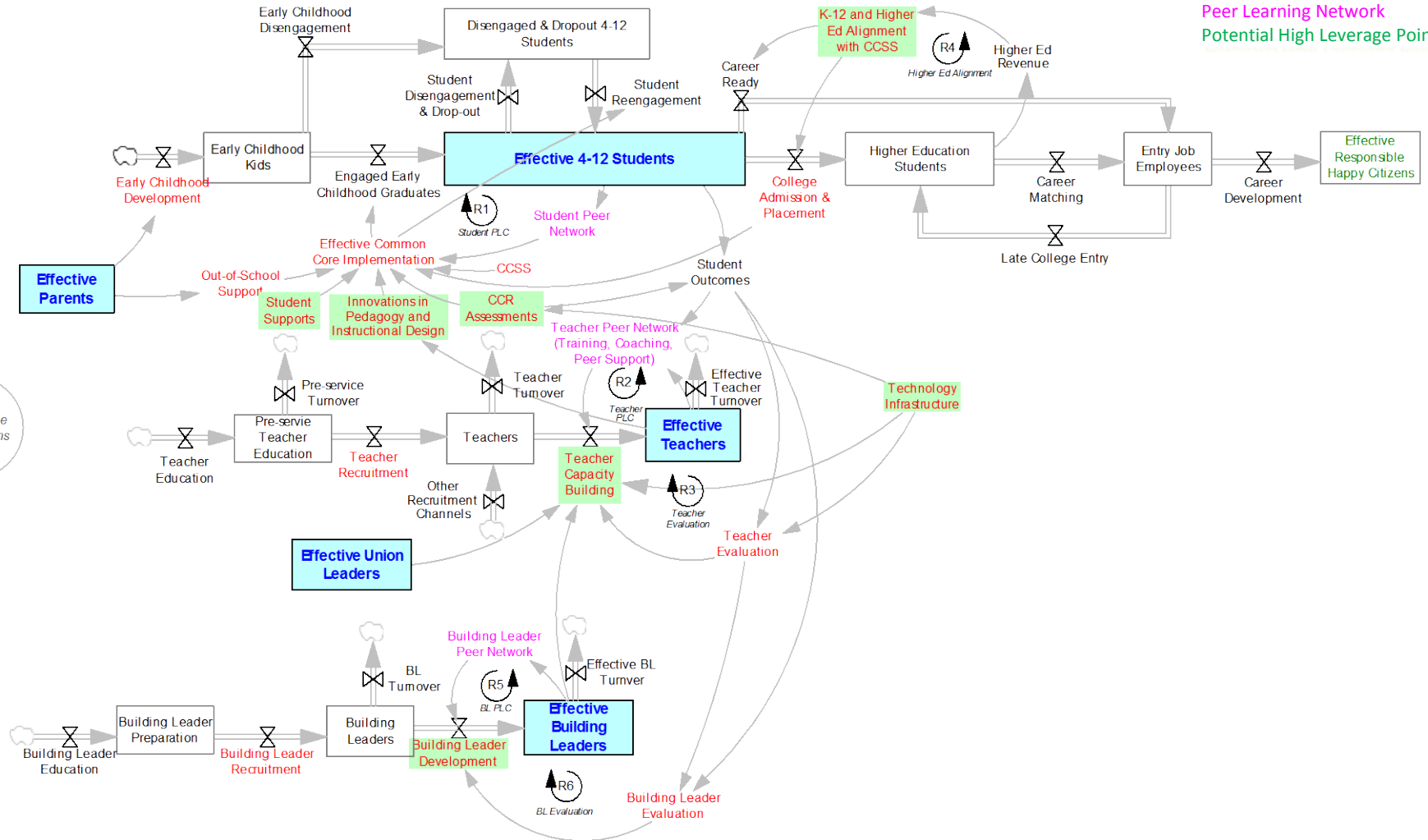


Color Code:  
 Key Systems Capabilities  
 Interventions  
 Peer Learning Network  
 Potential High Leverage Points



**R4 Higher Ed Alignment Loop:** more *Effective 4-12 Students* lead to more *Higher Education Students* as less students dropout. This in turn generates more *Higher Ed Revenue* and creates a business case in addition to moral case for further *K-12 and Higher Ed Alignment with CCSS*.

Color Code:  
 Key Systems Capabilities  
 Interventions  
 Peer Learning Network  
 Potential High Leverage Points

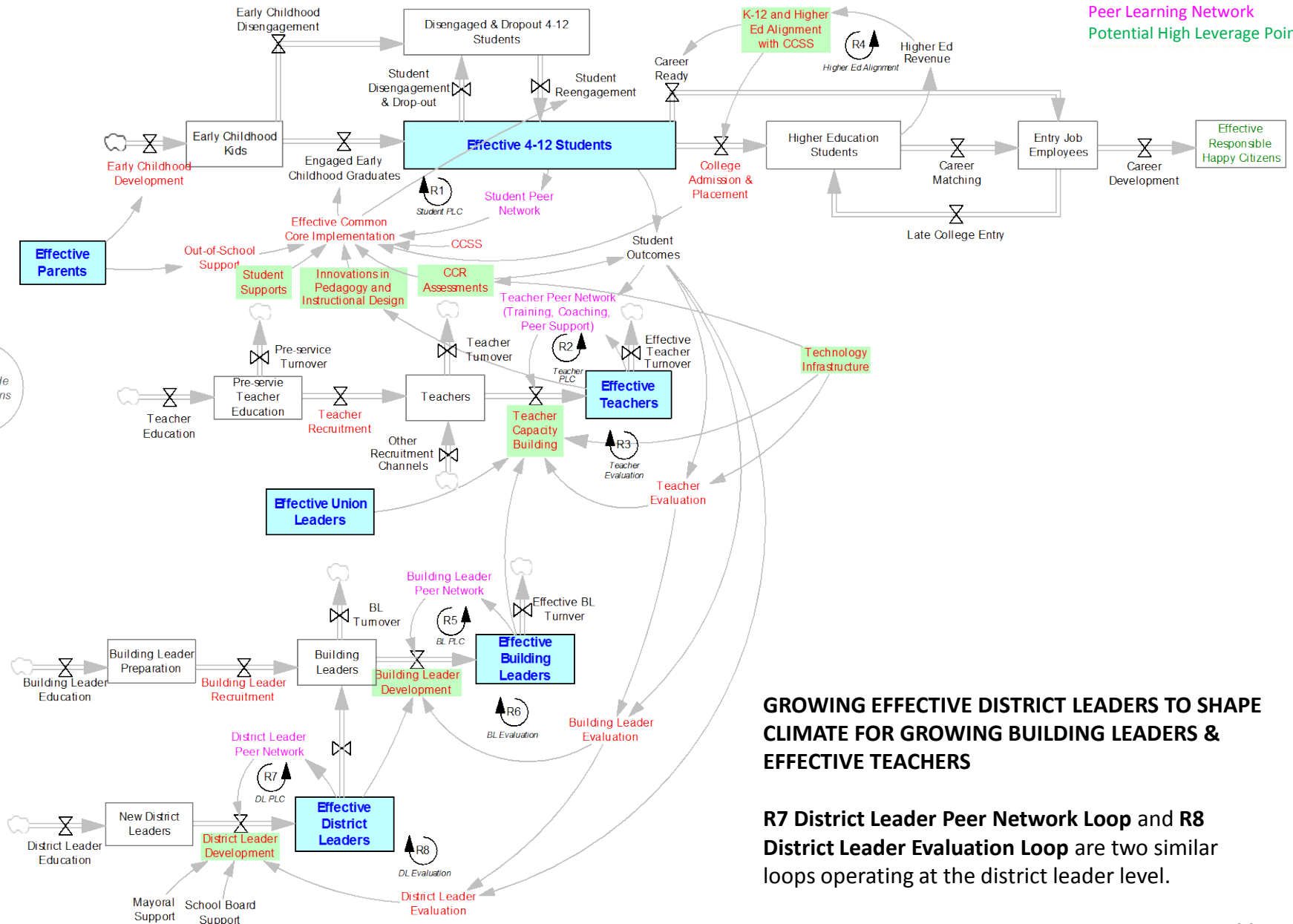


**GROWING EFFECTIVE BUILDING LEADERS TO SHAPE CLIMATE FOR MORE EFFECTIVE TEACHERS & IMPROVING STUDENT OUTCOMES**

**R5 Building Leader Peer Network Loop:** similar to R2 Teacher PN Loop, more *Effective Building Leaders* lead to a stronger *Building Leader Peer Network*, which increases *Building Leader Capacity Building* and creates more *Effective Building Leaders*.

**R6 Building Leader (BL) Evaluation Loop:** similar to R3 Teacher Evaluation Loop, setting the right *Building Leader Evaluation & Feedback* based on *Teacher Evaluation* and on *Student Outcomes* can guiding coaching and incentivize further *Building Leader Development* and creates more *Effective Building Leaders* over time.

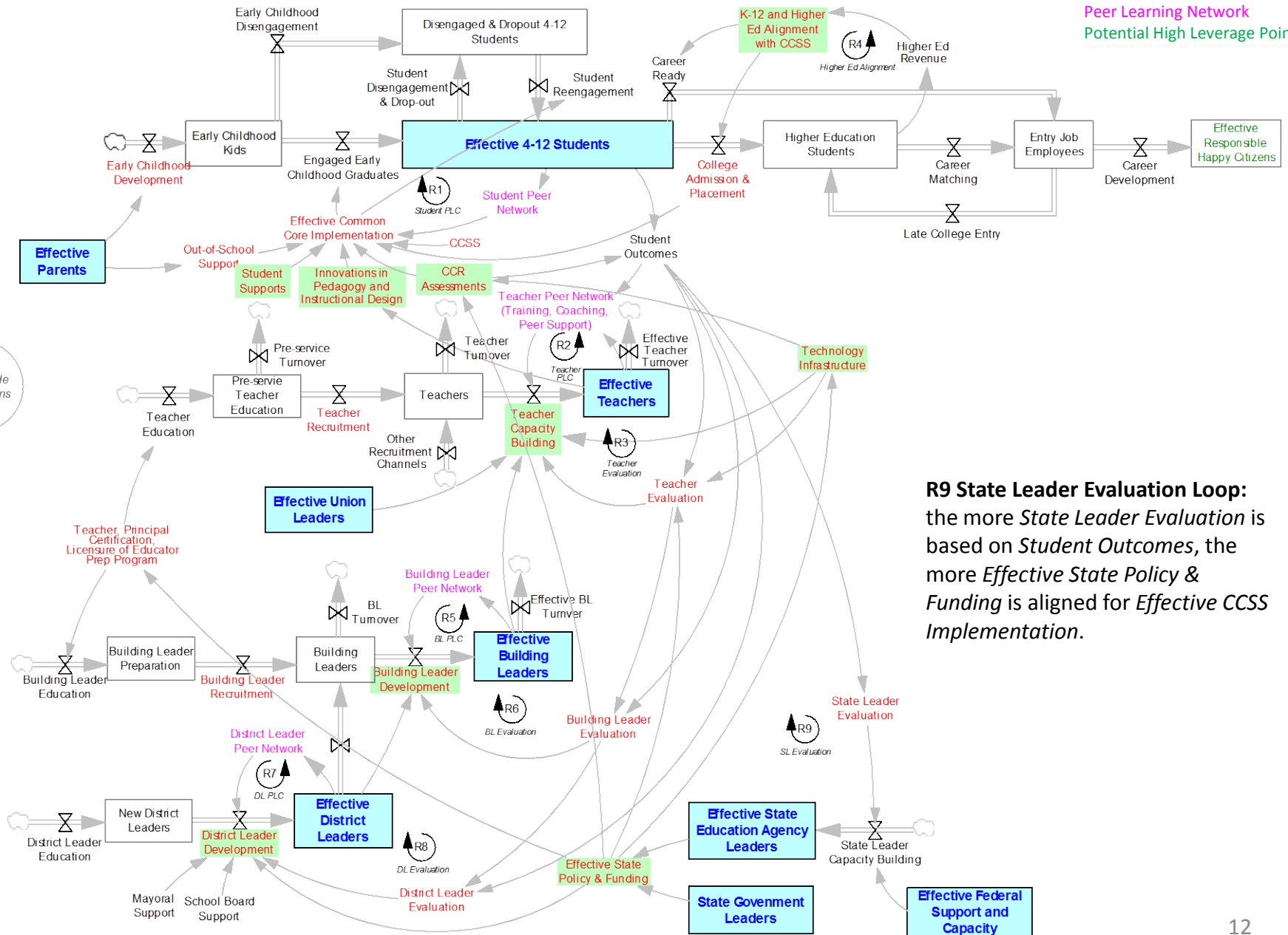
Color Code:  
 Key Systems Capabilities  
 Interventions  
 Peer Learning Network  
 Potential High Leverage Points



## GROWING EFFECTIVE DISTRICT LEADERS TO SHAPE CLIMATE FOR GROWING BUILDING LEADERS & EFFECTIVE TEACHERS

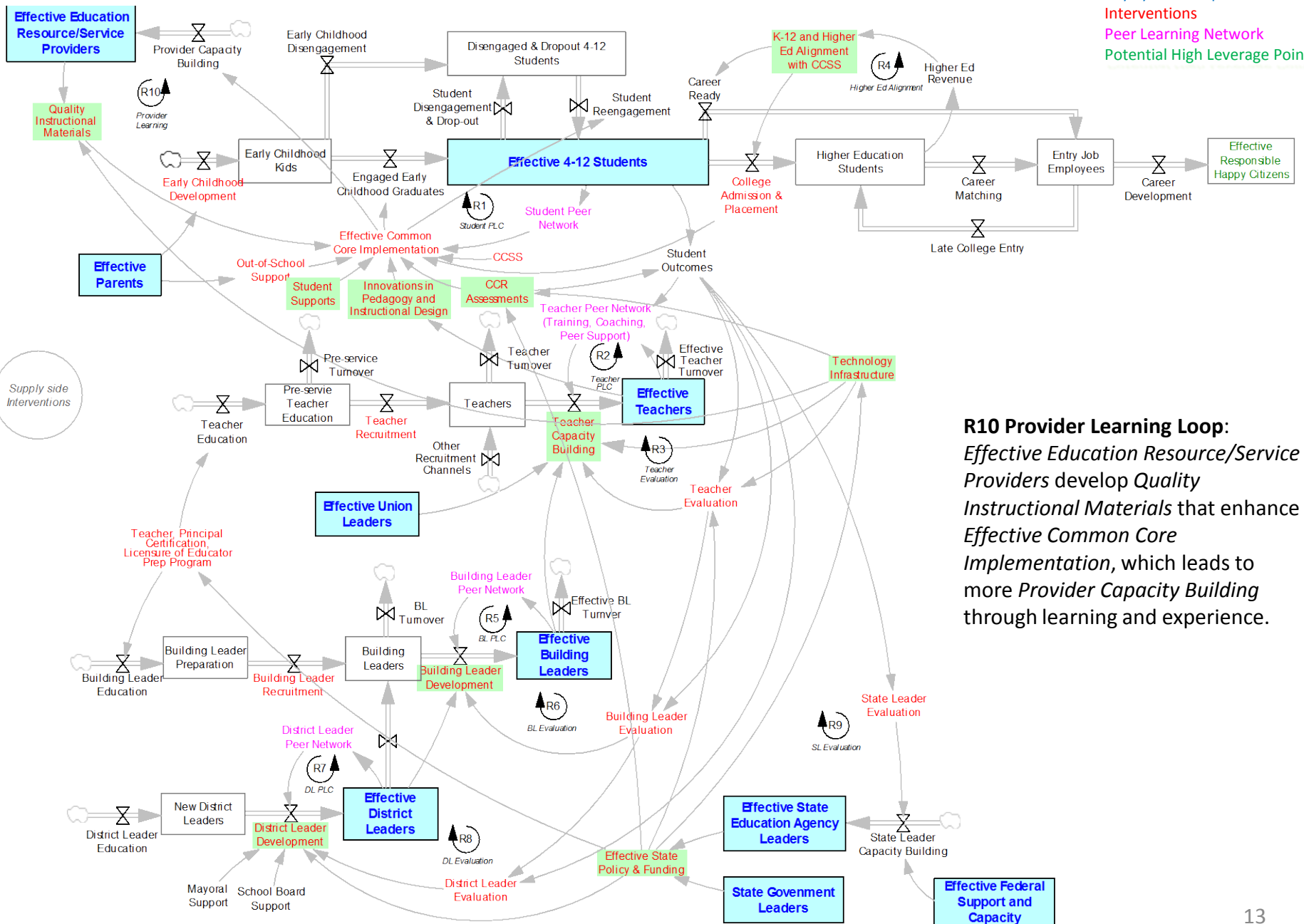
R7 District Leader Peer Network Loop and R8 District Leader Evaluation Loop are two similar loops operating at the district leader level.

Color Code:  
 Key Systems Capabilities  
 Interventions  
 Peer Learning Network  
 Potential High Leverage Points



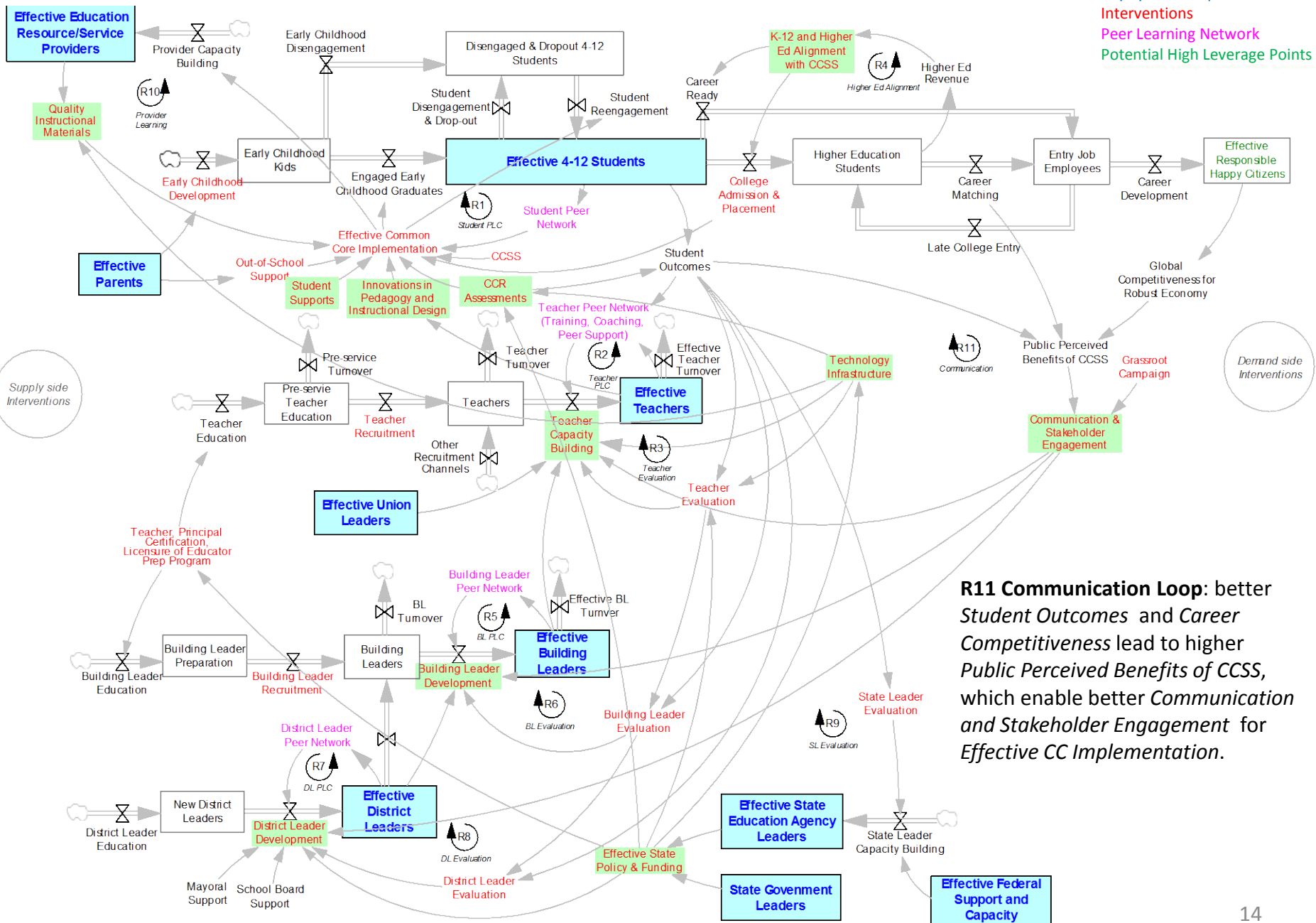
**R9 State Leader Evaluation Loop:**  
 the more *State Leader Evaluation* is based on *Student Outcomes*, the more *Effective State Policy & Funding* is aligned for *Effective CCSS Implementation*.

Color Code:  
 Key Systems Capabilities  
 Interventions  
 Peer Learning Network  
 Potential High Leverage Points



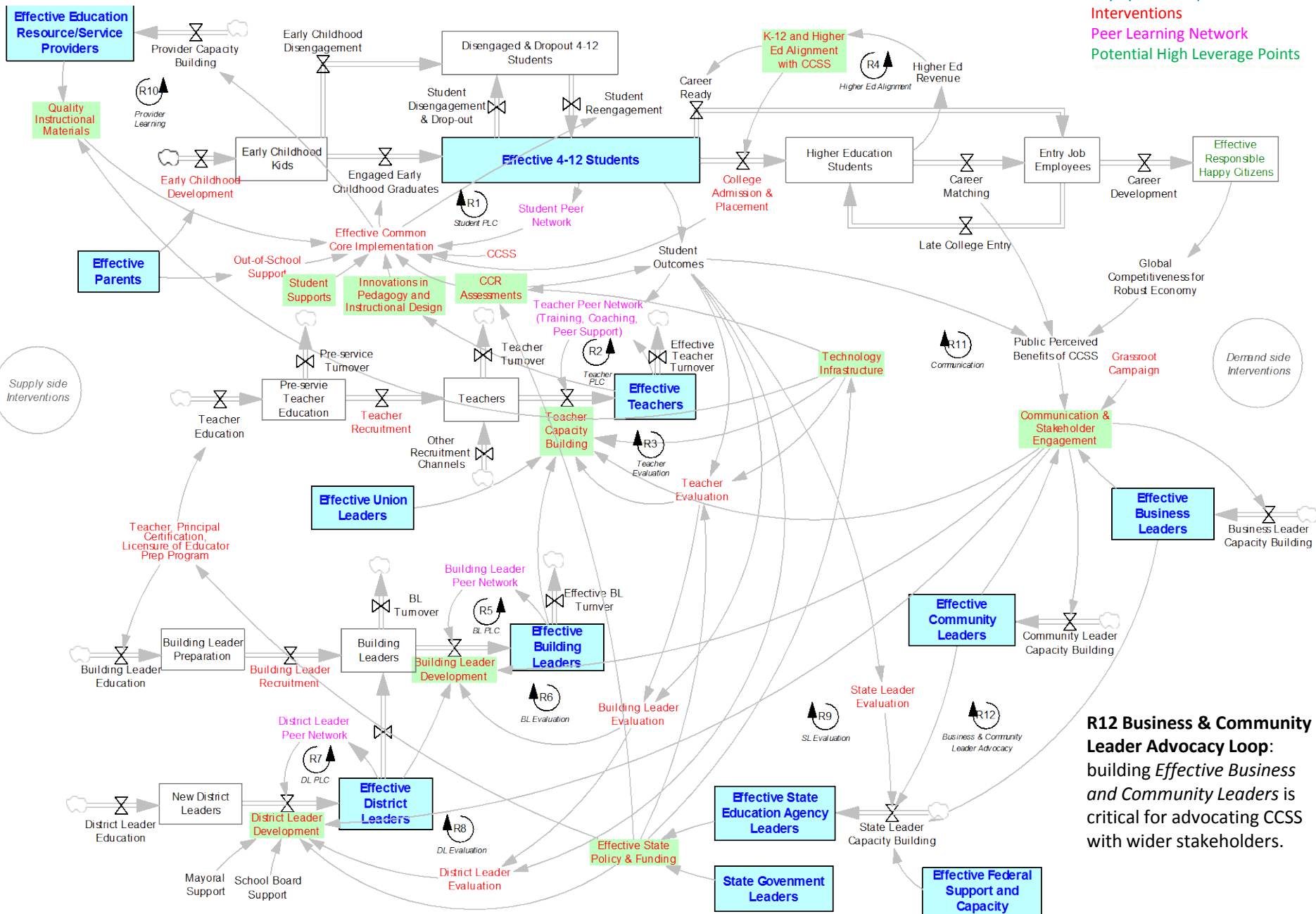
**R10 Provider Learning Loop:**  
 Effective Education Resource/Service Providers develop Quality Instructional Materials that enhance Effective Common Core Implementation, which leads to more Provider Capacity Building through learning and experience.

Color Code:  
 Key Systems Capabilities  
 Interventions  
 Peer Learning Network  
 Potential High Leverage Points



**R11 Communication Loop:** better Student Outcomes and Career Competitiveness lead to higher Public Perceived Benefits of CCSS, which enable better Communication and Stakeholder Engagement for Effective CC Implementation.

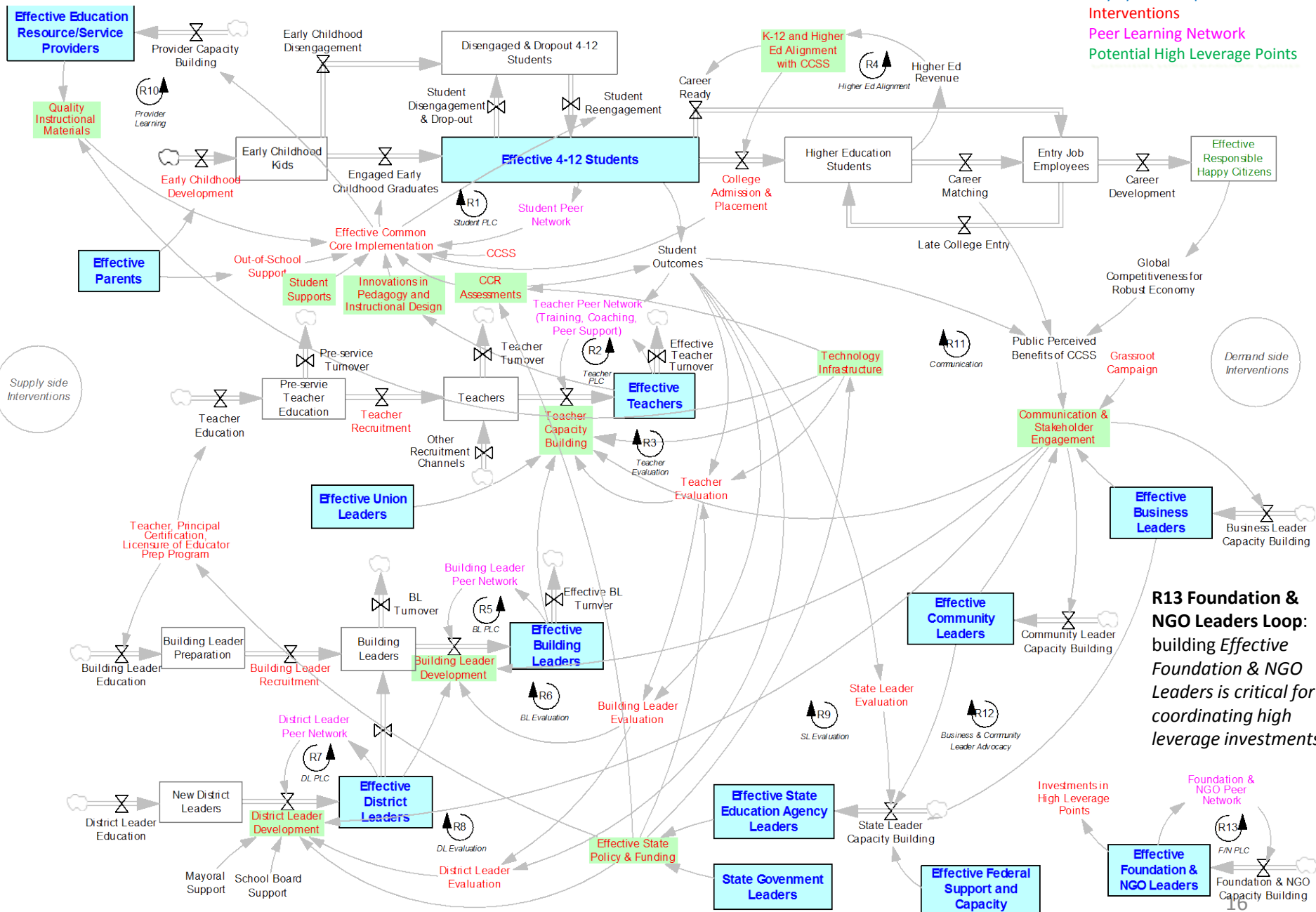
**Color Code:**  
 Key Systems Capabilities (Blue)  
 Interventions (Red)  
 Peer Learning Network (Pink)  
 Potential High Leverage Points (Green)



**R12 Business & Community Leader Advocacy Loop:**  
 building *Effective Business and Community Leaders* is critical for advocating CCSS with wider stakeholders.



**Color Code:**  
 Key Systems Capabilities (Blue)  
 Interventions (Red)  
 Peer Learning Network (Pink)  
 Potential High Leverage Points (Green)



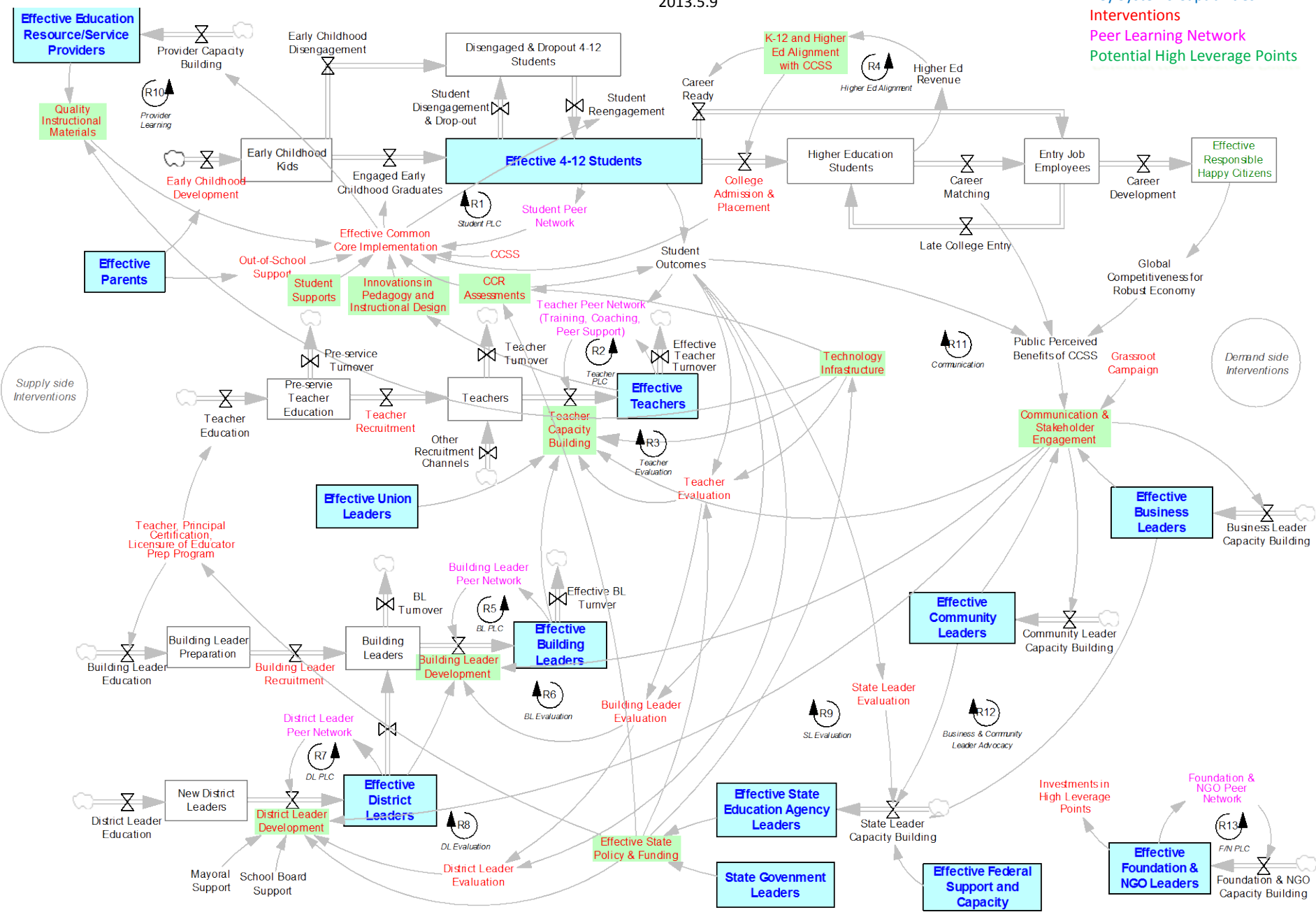
**R13 Foundation & NGO Leaders Loop:**  
 building *Effective Foundation & NGO Leaders* is critical for coordinating high leverage investments.



# Common Core State Standards Systems Map

2013.5.9

Color Code:  
 Key Systems Capabilities  
 Interventions  
 Peer Learning Network  
 Potential High Leverage Points





High Education Status

Career Matching

Late College Entry

Entry of Employees

Career Development

Global Competitiveness for Robust Economy

Public Perceived Benefits of OSS

Grassroot Campaign

Demand side Interventions

Communication Stakeholder Engagement

Effective Business Leaders

Effective Community Leaders

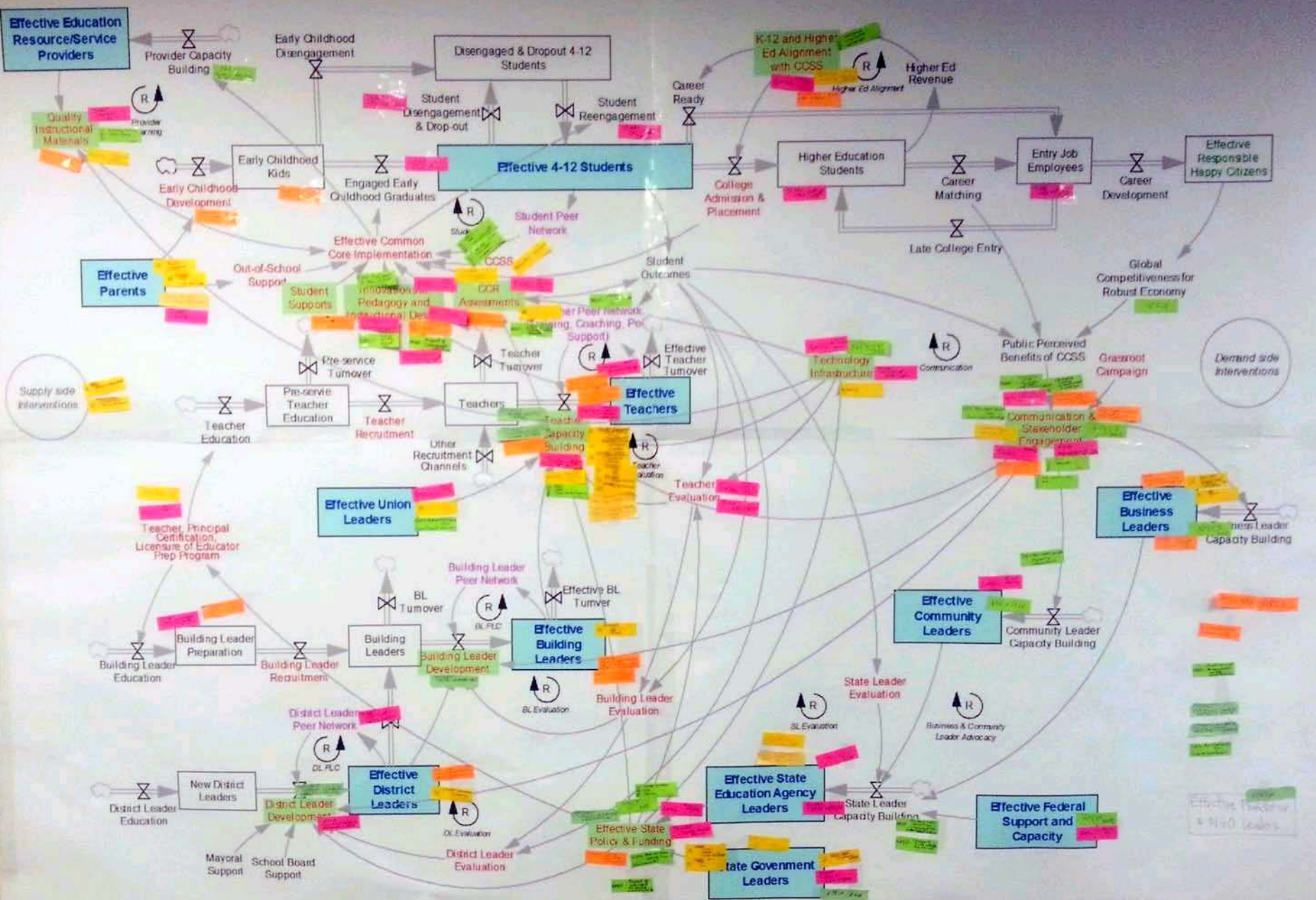
Community Leader Capacity Building

Business Leader Capacity Building

MISSING AREAS



# Common Core State Standards Systems Map



# How to Use the Map?

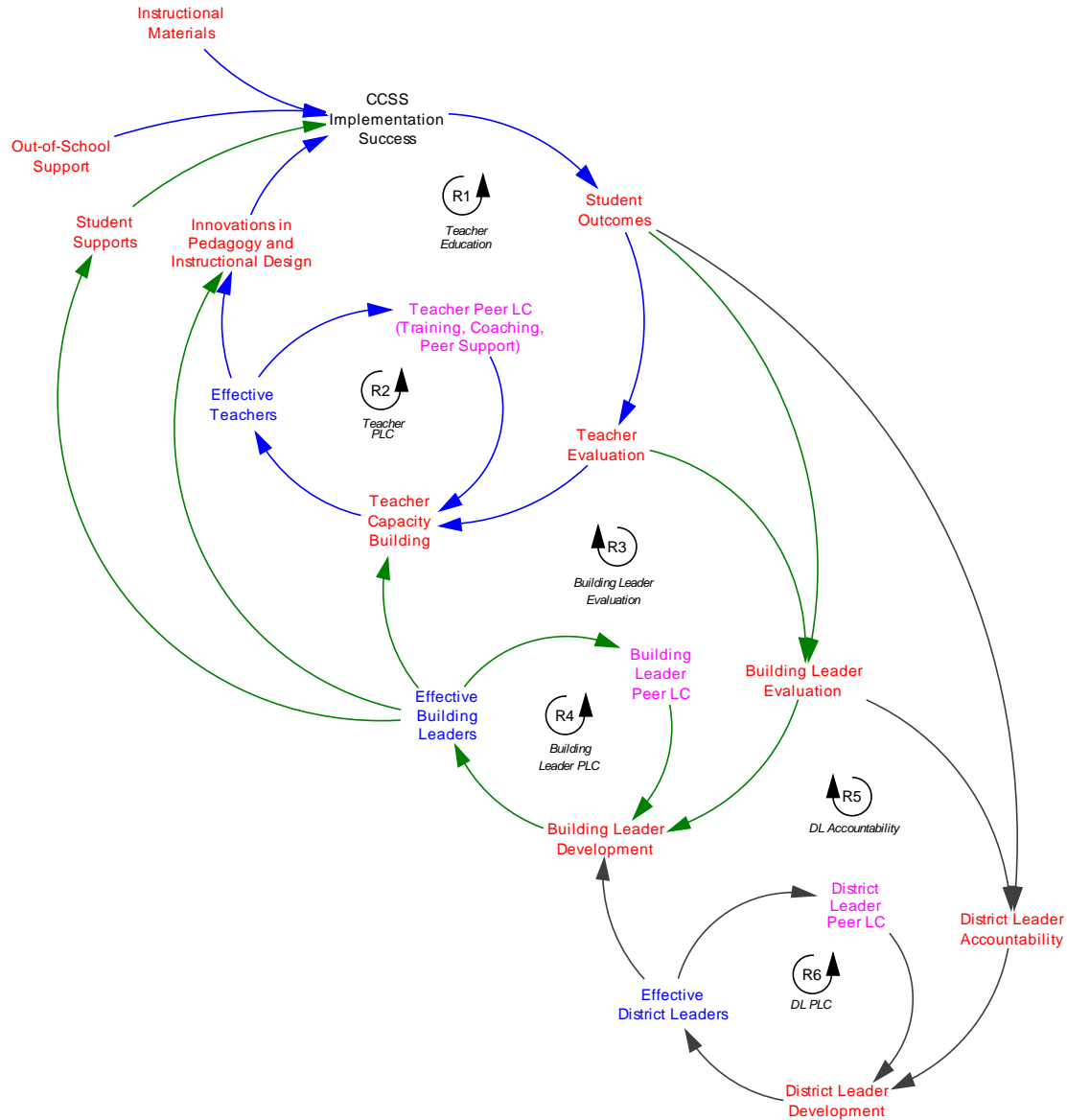
- When deciding on where to invest for effective CCSS implementation, one could use the map to reflect on the following questions:
  1. As you look at the overall map, what loops are high priority to ensure implementation of CCSS is successful? Why?
  2. Within those priority loops, what has been done about them currently? What are the weak or missing links in the loops?
  3. Of those weak or missing links, what high-leverage points and specific investments should be focused in order to strengthen the loops?
  4. How should those investments be sequenced under what timeline and why?

## 2. Core Reinforcing Loops

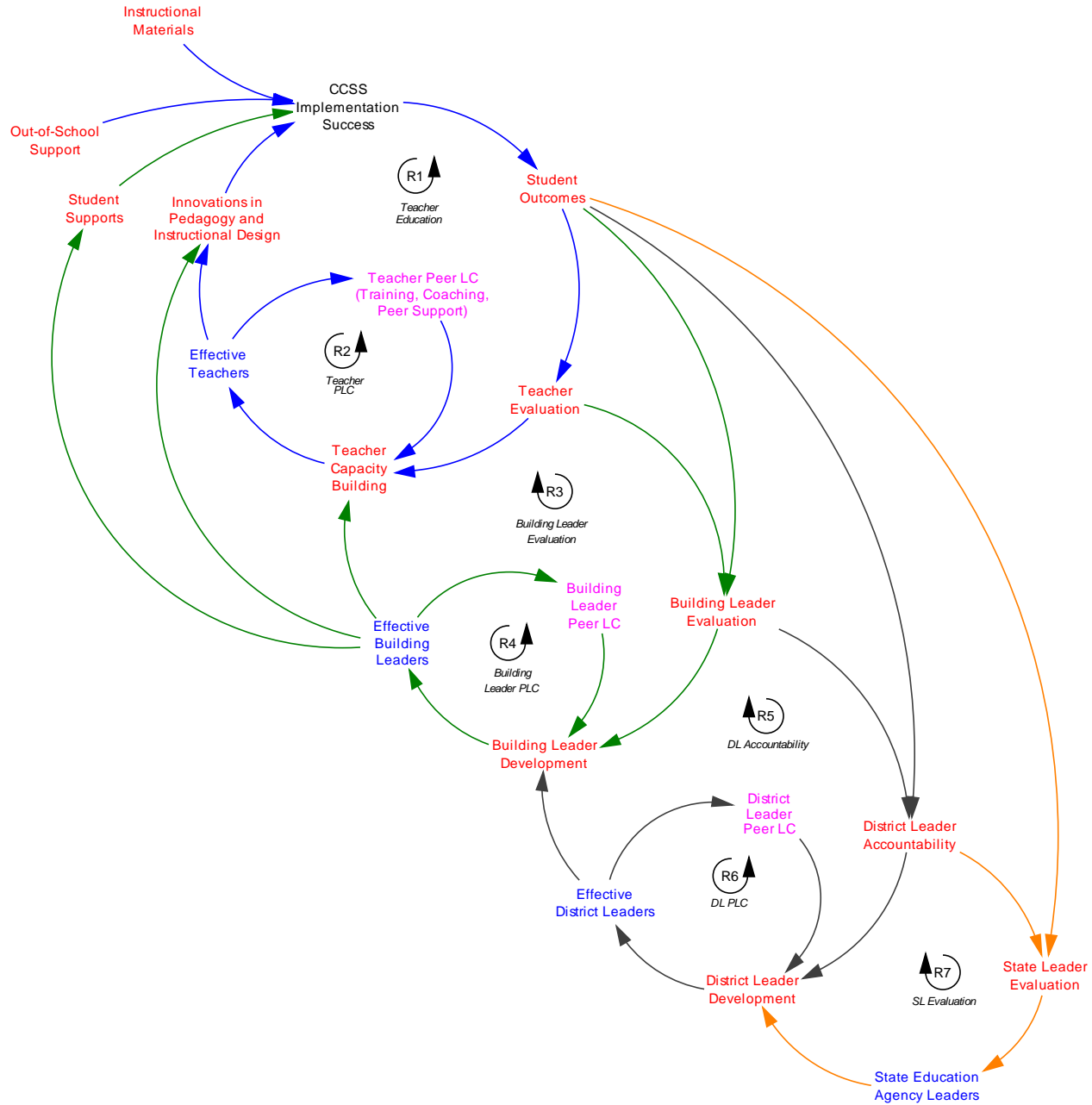
- The following map distills the core reinforcing loops from the more complex Stock-and-Flow diagram for ease of reading and focus.
- Each loop is renumbered that does not correspond to the ones shown in the Stock-and-Flow diagram.

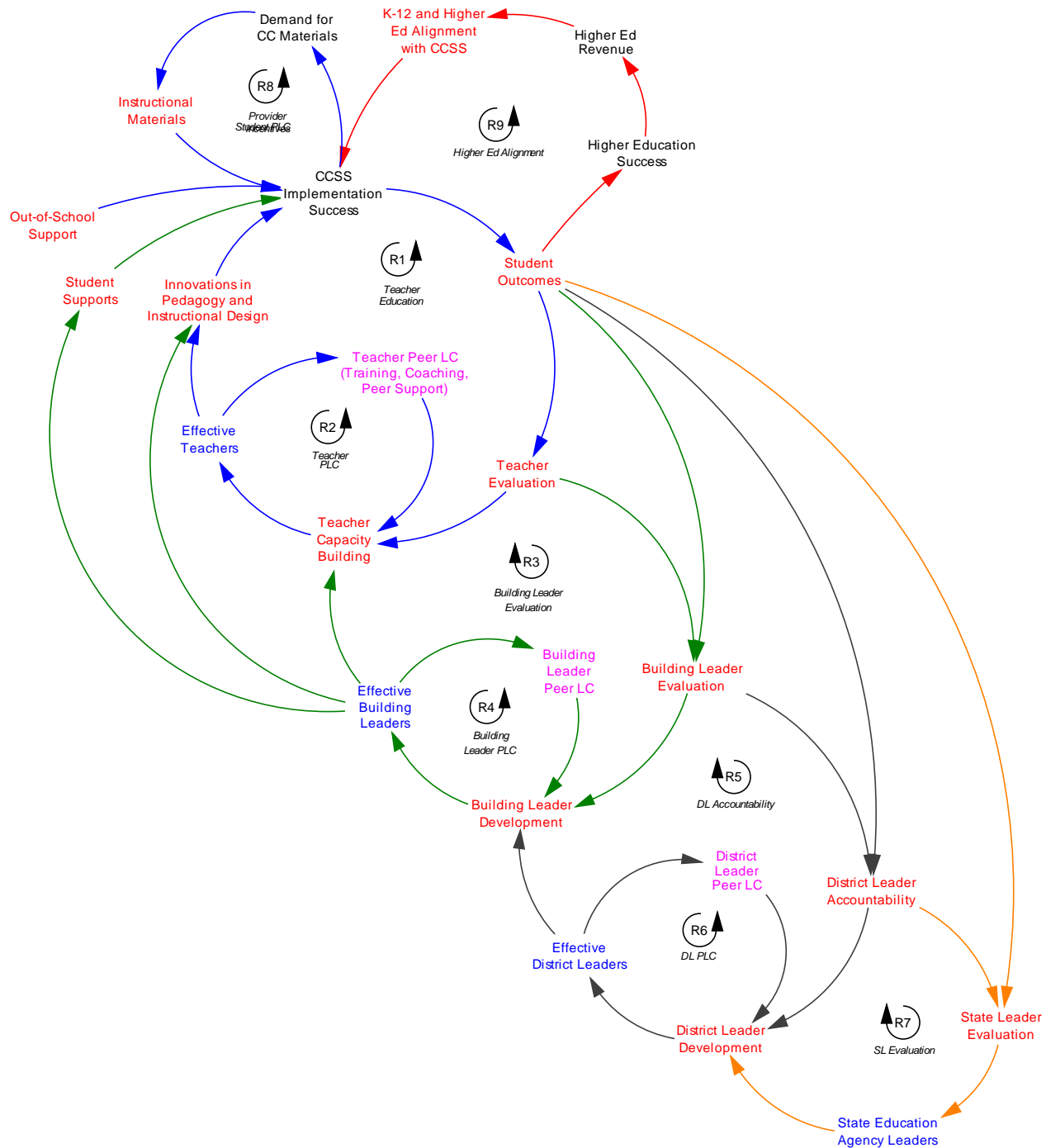


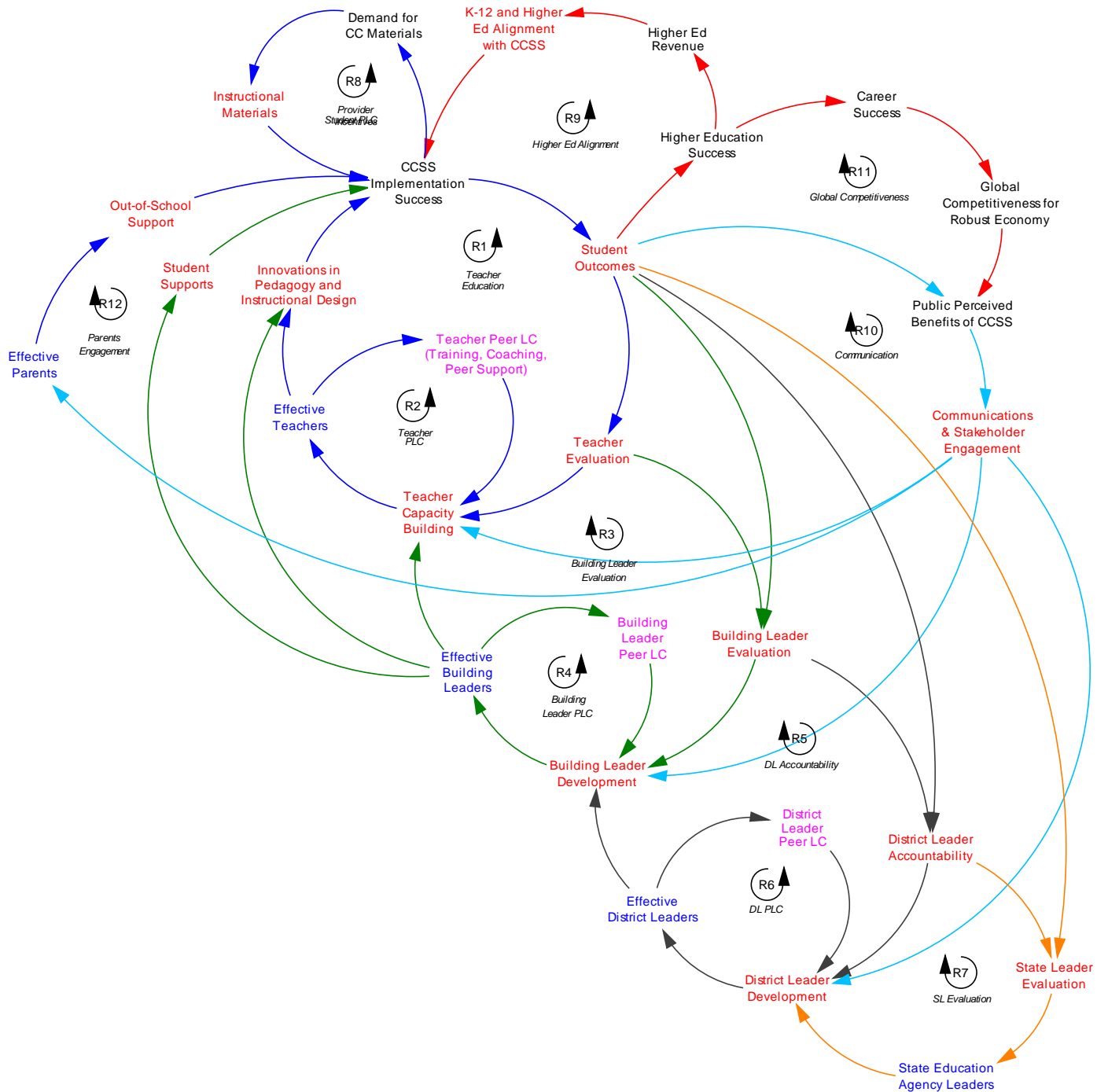














# Acknowledgement

- Sandra Alberti, Jim Applegate, Sue Cain, Barbara Chow, Tammi Chun, Michael Cohen, Eric Gordon, Donna Harris-Aikens, Scott Hartl, Kelly James, Glenn Kleiman, Dan Leeds, Lillian Lowery, Richard McKeon, Sue Pimentel, Bill Porter, Iris Taylor, Lisa Towne, Marla Ucelli